

**ABSTRACT**

An optical network comprises a fiber optic line having first and second point-of-presence (POP) units connected to respective first and second ends of the fiber optic line. First and second optical communicators are connected to the fiber optic line at locations between the first and second POP units. First and second optical network units (ONUs) are operably connected to respective first and second optical communicators. The first optical communicator is configured to transmit a first wavelength signal bi-directionally from the first ONU to both the first and second POP units and drop a second wavelength signal from the fiber optic line intended for the first ONU. The second optical communicator is configured to transmit a third wavelength signal bi-directionally from the second ONU to both the first and second POP units and to drop a fourth wavelength signal from the fiber optic line intended for the second ONU.

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